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AUTHOR	Skutsch, Margaret; Hall, Diana
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ABSTRACT

Delphi is a method for obtaining group judgments on factual matters for which precise information may not be available, and on values for which information is a matter of opinion. This paper discusses different applications of the Delphi method to educational planning and attempts to evaluate its potential in resolving the particular needs of the educational planning process. The technique is described and explained, and specific areas in which Delphi could be used are considered. Examples of cases in which the technique has been applied are presented. Particular attention is paid to the kinds of actors or participants who are likely to be involved in each decision area, and the most suitable designs for a Delphi exercise are outlined for each case. (Authors)

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DELPHI:

POTENTIAL USES IN EDUCATIONAL PLANNING

By

Margaret Skutsch and Diana Hall
Department of Industrial Engineering
Northwestern University

Project Simu-School: Chicago Component

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Project Director

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Simu-School: Center for Urban Educational Planning
Chicago Board of Education
28 East Huron Street
Chicago, Illinois 60611

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FOREWORD

Modern-day educational planners face an extremely difficult task of providing quality education to large masses of students in view of decreased revenues, soaring costs, shifting populations and changing educational programs. Such a challenge requires that a far greater emphasis be placed on planning for schools than has been the case to date and necessitates the development of improved techniques specially designed for educational planning.

Project Simu-School is intended to provide an action-oriented organizational and functional framework necessary for tackling the problems of modern-day educational planning. It was conceived by a task force of the National Committee on Architecture for Education of the American Institute of Architects, working in conjunction with the Council of Educational Facility Planners. The national project is comprised of a network of component centers located in different parts of the country.

The main objective of the Chicago component is to develop a Center for Urban Educational Planning designed to bring a variety of people--laymen as well as experts--together in a joint effort to plan for new forms of education in their communities. The Center is intended to serve several different functions including research and development, investigation of alternative strategies in actual planning problems, community involvement, and dissemination of project reports.

Many planning problems require collective inputs from a number of individuals, whether they are community representatives helping set goals, or professional planners forecasting future trends. Hence, it is necessary to utilize techniques for bringing about consensus among a variety of individuals. The present report provides a brief description of one such technique--Delphi--and identifies the potential for its use in the field of educational planning. It is hoped that the ideas contained in this report will help stimulate further applications of Delphi in educational planning.

Ashraf S. Manji
Project Manager

DELPHI:
POTENTIAL USES IN EDUCATIONAL PLANNING

I.
INTRODUCTION

The Delphi technique was originally developed by the Rand Corporation in the mid[illegible] 1950s and since that time has been used to aid decision-making in many areas of planning. Delphi is a method for obtaining group judgments on factual matters, for which precise information may be unavailable, and on values, for which information is a matter of opinion. Delphi can be applied as a sophisticated, objective procedure to correct objective information from a group of persons and to organize it to provide input to any decision-making process.

It is the purpose of this paper to discuss different applications of the Delphi method to educational planning and to evaluate its potential in resolving the particular needs of the educational planning process. In the sections that follow, the Delphi technique is described and explained, and specific areas in which Delphi could be used in educational planning are considered; examples of cases in which it has been applied are presented. Particular attention is paid to the kinds of actors or participants who are likely to be involved in each decision area, and the most suitable designs for a Delphi exercise are outlined for each case.

Before discussing the potential applications of Delphi to educational decisions, a thorough description of the procedure is in order. A general description of the sequence of steps in a Delphi are presented below, and the principles upon which the method was designed and which seem to make it so effective are outlined. The ability of the procedure to respond to a variety of different planning problems and the alternative designs which can be used to implement a Delphi are also discussed. Finally, some limitations of the procedure are considered.

II.
THE DELPHI TECHNIQUE

The characteristic feature of the Delphi technique which distinguishes it from other group decision-making mechanisms is its iterative structure. Each participant is involved in a series of rounds, between which information from the previous rounds is synthesized and summarized. Moreover, participation is completely anonymous. This means that between each round, the participant receives feedback, not from individuals in the group, as would occur in an open group discussion, but rather from the group as a unit.

A typical Delphi deals with a set of questions which participants are required to answer, each to best of his ability. Usually, these questions require the participants to make subjective judgments of some kind, either because (in the case of factual questions) there is limited background information available, or in the case of non-factual questions, because the questions are designed to measure taste or community values. When each participant has submitted his responses to all the questions on an unsigned reply sheet, the organizing team combines the responses to each question to produce an estimate of the "group opinion." Most Delphis are concerned with questions of a quantitative nature, so that the group

opinion may be estimated by a calculated statistic such as the mean or the median response; in the case of non-quantitative questions, the answers must somehow be amalgamated to allow fairly rapid review.

The summary information is returned to each participant, either verbally or in written form, and after he has had time to consider this feedback, he is given a question sheet on which identical questions as were asked in the previous round are listed. He is asked to answer these questions again; but if he does not agree with the "group opinion" closely, he must state in some detail his reasons for disagreement, which are included as part of the summarized feedback to the group in the following round.

The purpose of this feedback is for the participants to benefit from each others' information and ideas. The idea is to find the best answer to each question not just by asking each participant his opinion, but to develop a best answer by allowing the participants to reach a consensus of opinion. Participants who are not so well informed on a particular question or whose views on the question are not strong will be encouraged to join in with the consensual or prevailing opinion; participants who have good informational resources or strong opinions on a question may influence the whole group by expressing these in the feedback. Thus the Delphi is not like a referendum, in that some people may have more influence than others; nor is it like a conference, since everybody has an equal opportunity to influence the group--each has an equal time to express his views, and stands an equal chance that these will be accepted by the group. Thus Delphi is democratic in a very strong sense, and

rational in that it allows each person to learn, and to make increasingly informed judgments.

PRINCIPLES OF DELPHI

The principles that explain why the Delphi technique succeeds in achieving consensus in situations where conflict and indecision might be expected are derived from the theory of small group psychology. The first is that *group judgments are superior to individual ones.* Two heads, in other words, are not only better than one; two heads working together produce more than the sum of the same two working separately. This synergistic effect is something of an everyday experience and is one that anyone who has participated in team research knows. It is caused by pooling of informational and skill resources among team members arising from reinforcement of the individual by the group for cooperative behavior. In this aspect, Delphi operates in the same way as any team work effort. By producing feedback from the group as a whole to the individual, information is shared to the greatest extent possible, and the individual is made aware of his place as a part of the team.

Teams, however, frequently do not benefit immediately from the advantages of team "togetherness;" indeed, it often takes some time for adjustment and learning before the team can operate really well; sometimes a team never succeeds in functioning well at all. A period is needed for each individual to become sensitive (either consciously or unconsciously) to each other's personality, and for the group leadership

and "pecking order" to be worked out in a way that is satisfactory to all members. *Ad hoc* teams frequently function poorly because of personal conflicts between members, and these may result in stalemates and counter productivity as personal lights take precedence, over the objective discussion of the group's work. This sort of conflict is often not overt, but is expressed merely by lack of enthusiasm of the group in the problem, by lack of participation by some members of the group, etc. This is particularly true if the members of the team are aware that they disagree with other members before the discussion even begins, as for example might be the case in a team of discontented high school students meeting with school administrators to settle their differences. In general, these problems are the result of the individual's unconscious feeling that the group is evaluating him as a person, rather than evaluating his ideas and information.

The second principle of Delphi--*that anonymity brings greater rationality to the decision-making process*--relates directly to the counteraction of this problem. The participant is always protected personally from the threat of group disparagement. His ideas may be accepted or rejected by the group but the authorship of the ideas is irrelevant in Delphi. The group treats all feedback equally, instead of evaluating pieces of feedback separately based on *a priori* conceptions relating to other participants. Thus, productivity is high in the Delphi where conflict is at the informational and seldom at the personal level.

The third principle--*group pressure acts to consolidate group opinion*--is the result of what in social psychology is referred to as "group main-

tenance." People in groups have an inate tendency to support the group in its real goals, which in the case of problem-solving teams, is the findings of solutions to the problems. Group opinion is consolidated by an unspoken group pressure on all members to conform. This is a positive force which underlies all social functioning and is clearly vital, for decisions must somehow be made despite individual differences.

The Delphi technique does not detract from this natural tendency for organization and order. It acts merely to release individuals from "persecution" (principle two)--the drive to work towards a solution rather than away is maintained as in any other group situation. Thus, consensus is encouraged and personal involvement of all participants is maximized.

From this discussion it is clear that the Delphi technique is particularly applicable to decision-making and participation when the following elements are required:

1. A variable number of people with varied skills and status are to be included.

2. Democracy, in which each person contributes to the best of his ability, and has an equal vote, is the standard.

3. No prior training or "team-building" is feasible to develop good working relationships.

4. A variable number of questions or issues are to be posed.

ALTERNATIVE PURPOSES

The Delphi technique is quite flexible as to content, or type of questions to be asked. It has been widely used as a device for estimating quantities and probabilities ("How many doctors will be practicing in the Chicago area in 1985?"; "What was the quantity of grain exported from the U.S.A. in 1940?"; "What is the probability of a cancer cure being developed by 1985?"; etc.). These uses are primarily forecasting efforts in areas where considerable uncertainty exists. Delphi has also been used in the area of value judgments ("Which of the following three pictures is the most beautiful?"; "Rate the importance of the following innovations on a scale from one to five."). These Delphis are designed to solicit opinion, explore feelings and make recommendations.

It will be seen from this that *both* types of Delphi may be of value in the systems view of educational planning. Delphi may be used at an informational level to develop either factual or attitudinal input, or it may be used at a decision level, using a combination of fact and opinion. The distinction between these two roles lies primarily in the identity of the participants. If only the true decisionmakers (i.e., those who bear responsibility for the outcome of a decision) are involved in a Delphi, the Delphi becomes a possible tool for finalizing decisions in any one part of the educational planning process. If, on the other hand, not all the true decisionmakers are involved, or if people other than the true decisionmakers are included, the Delphi is to be regarded as a tool for building information which decisionmakers

may then incorporate in the due process of their decision-making. In this latter case, the Delphi plays the role of a sophisticated survey technique.

ALTERNATIVE DESIGNS

Fortunately, the Delphi technique is as flexible in its means of presentation as it is in its role or function. This is one of its most useful features, because it allows the operational design of the Delphi to be tied to the particular needs and resources of the selected participants. A simple Delphi involving a few members of a School Board might be carried out at a single session in which three or four rounds could be generated. The School Board members' prior knowledge and body of common experience would facilitate a speedy development of consensus since there should be little misunderstanding of intent and few difficulties with terminology used. This sort of Delphi could be handled by a small team of two or three organizers, whose main task would be edit and summarize the responses to each round.

Delphis involving larger numbers of people are more difficult to handle because of the difficulties of quickly reducing responses to reasonable form for feedback. With more than fifteen people a more satisfactory strategy is to run each round as a separate step, either by calling a series of meetings, one for each round, or by mailing each round to all participants with suitable pre-paid envelopes for return. A combination of meetings and mail-outs is often used, and usually has a better rate of response than a strategy that relies on mail contact

only. More sophisticated approaches using computerized communication could be considered, particularly if the Delphi participants are V.I.P.'s and highly pressed for time. One study utilized experts in several cities in the U.S. by establishing telephone-computer links. The participants each had access to a terminal where, at the touch of a button, the edited results of the previous round would be displayed; the participant could then type in his response to this feedback, which would be electronically processed by the machine.

LIMITATIONS

One major limitation to the use of the Delphi is that the method is a time consuming one. Participants must be willing to devote the time required to give careful consideration to the questions, since they appear in a somewhat open-ended format. Experience with Delphis has shown that the time required per respondent for the completion of the questionnaire varies between one-half hour and one and one-half hours.

Between rounds, time is required for the researchers conducting the Delphi to aggregate and analyze the responses and to prepare histograms or statistics to be used to feedback information. Estimates of time required vary considerably with circumstances of the Delphi. However, a reasonable time estimate for the completion of three rounds of a mail-out Delphi using two researchers and involving 30 respondents would probably be 142 man-hours of work. The total time lapse allowing for mailing would be about two months.

One of the dangers in designing a Delphi is that the time horizon for completion and the necessary manpower may be underestimated. Furthermore, if a Delphi is allowed to drag on, that is, if turn-around time between rounds is too long, then participants may lose interest, and this will be apparent in the decreasing quality of their responses. These threats to the effectiveness of a Delphi may be controlled, however, by careful design and efficient, rapid implementation of each step. The main idea in running a Delphi must be to keep the interest of the participants up so that they continue to contribute ideas and opinions. Each round must therefore represent a real advance in the thinking of the group, and to the greatest extent that is feasible, successive comments made by individuals should be incorporated. If participants feel their effort is leading to some real consensus, any design of a Delphi may be used and will be effective in bringing group opinion together.

III.
POTENTIAL APPLICATIONS OF DELPHI

Within the spectrum of education-related decisions, four major areas in which planning must be carried out have been identified; these are (1) human relations, (2) provision of facilities and services and curriculum planning, (3) evaluation, and (4) business operations. These areas overlap somewhat but within each, decisions must be made which have implications both at the level of policy-formulation and in school administration. Moreover, the purposes of the inputs may be to provide information for decision-making (attitudes, preferences) or to resolve the decision itself. Delphi can be adapted to meet many of these information requirements, as will be shown in the following pages.

HUMAN RELATIONS

Perhaps one of the most important areas in educational planning is that of human relations, in which arise such problems as:

1. How can the community be given the opportunity to participate in shaping the educational philosophy of their schools with respect to shared ideals and cultural values?

2. How can the Board of Education fulfill its legal obligation to find out what the community wants and to secure support for its educational programs?

3. How can a successful public relations program be established which will encourage a cooperative team relationship between the community and school authorities?

4. How should educational objectives be established along with priorities indicating their order of importance in accordance with community values?

The discernment of community will for the purposes of education is inhibited by two important factors: (1) the complexity of concepts and values held by individuals and (2) the varying degrees of interest in, and commitment to, public education. There are a few standard techniques which have been developed to provide community input into educational planning and decision-making. These are:

1. The hiring of administrators with sensitivity to peoples' wants.

2. The election of concerned community leaders to positions on the Board of Education.

3. The organization of citizens committees.

4. Public opinion polls and survey methods.

5. Referendums.

All these techniques have met with relative success in some situations and relative failure in others. Delphi could stand alone as a group decision-making device or it could be used in combination with some of the above methods to increase their effectiveness. For example, the effectiveness of citizens committees is greatly inhibited by the fact that such committees cannot agree about what they want to accomplish. Delphi could help citizens identify the areas in which they agree and help resolve issues where there is disagreement by making extreme positions more clearly defined. Public opinion polls and surveys are hampered in that the participant has only one opportunity in which to make his response; whereas with Delphi, the responses of everyone are fed back to each individual so that he may reconsider his own opinion in light of this new information. Referendums unfortunately suffer from poor voter turnout. Perhaps mail-back Delphis could be used to generate interest in important issues before a referendum is taken. Thus, the position of the referendum as the legal decision-making device could be enhanced by Delphic communication processes and could be made the end point of efforts to attain programmed community involvement.

Questions of objectives and their priorities especially are the concern of a wide number of people, who, with differing backgrounds and ideologies cannot easily come together to rationally discuss goals for the Educational process. The problem of dealing with such large numbers of persons, in itself, creates considerable concern among those responsible for insuring that all voices are heard. The Delphi method presents a reasonable alternative to the public meeting for this function.

A study carried out in a Cook County School District has shown that large numbers of persons can be involved in goal setting through a Delphi which consisted of both group meetings and mailed questionnaire rounds (Skutsch, 1972A). A small group of participants was contacted initially to generate a preliminary list of goals, and a larger group (about 100 persons) worked over a period of six months to expand this list. Attempts at developing goal weights were less successful than goal development itself. An alternative design for a Delphi was proposed for another school district, in which participants were not to be contacted personally, but through the mass media (Skutsch, 1972B). Cooperation from the local press in publishing the list of goals generated on a weekly basis, and using a "tear out this page and mail it with your comments to the School Board" approach for soliciting the opinions of readers would create an open and flexible Delphi strategy reaching widely into the community.

Delphis applied to human relations problems are probably broader in content and design than Delphis for some of the other areas discussed below, and as such, require designs of maximum flexibility to allow maximum feasible participation across the community. Mixed strategies combining information derived from public meetings, local press editorials, etc., as feedback along with information derived from the formal Delphi itself, would probably have the greatest success in raising the consciousness level of the community towards educational planning issues.

FACILITIES, SERVICES AND CURRICULUM PLANNING

The delivery of facilities and services, and the planning of school

curricula present three areas of great community concern, largely because these require major financial investments which the community must ultimately make. Although no one would dispute the importance of curricula, the question of what the curriculum should include is one that may be debated. Provision of facilities and services is viewed as being somewhat more peripheral but, nevertheless, important in maintaining a high quality of education. It is in these three areas that most community interest in the educational planning process will be centered.

Planning for facilities provokes such questions as:

1. Forecasting; e.g.,

   What are the present population trends and how will they affect future enrollment?; and

   What facilities are needed now and what facilities must be planned now for future needs?

2. Location of educational facilities; e.g.,

   How can information concerning trends in land-use, community growth, industrial expansion, and construction of transportation arteries be developed?; and

   What are the implications of these patterns for the location of educational facilities?

3. How can the design of the facilities be made to reflect the preference of those who will use the facilities?

The first two questions suggest the use of Delphi as a forecasting tool, and this is a well-tested application since the first Delphis conducted by the Rand Corporation were designed specifically to pool the knowledge of experts into a set of forecasts concerning military maneuvers.

The same basic procedure could be used with an assembled group of demographers, economists, planners, etc., to determine future growth trends and the impacts upon the local educational system. The numbers of people involved in a forecasting Delphi of this kind would probably be much less than in a goal setting type of Delphi. The Delphi method can be very effective in spreading technical information between the experts concerned. It could serve in the same capacity as in-house Board of Education staff efforts at forecasting, except that the possibility of including outside expertise, perhaps from consultants, is increased, since such consultants could participate in the Delphi along with regular staff members.

Regarding the third question, information concerning user preferences for facilities planning can be channeled directly into the design process by asking students, teachers, administrators, etc., to specify what activities should be provided for, how much space should be devoted to them, what kinds of playground equipment are preferred, etc., etc. Usually, a briefing would be arranged between the facility designers and the users in order to explain the feasible alternatives to the participants in the Delphi. But it is this opportunity for engaging in both oral and written communication which can assist the designers in planning a facility which

will be both utilized and enjoyed. This type of Delphi would be very similar in function to a survey, except that group discussion of issues raised would be developed through the feedback mechanism.

Questions concerning service provisions would probably include the following:

1. What sorts of personnel services are required to facilitate recruitment, supervision, grievance expression, etc.?

2. What pupil personnel services and equipment are required for testing, record-keeping, storage, filing, etc.?

3. How could community support for the addition or extension of such services be solicited?

A suitable format for a Delphi responding to these questions would probably be one in which the alternative possible levels of service provision are very carefully laid out for review. Scenarios describing alternative levels in easy-to-grasp terms might be used; or a "consciousness-raising" session could be organized for participants prior to the Delphi at which the outputs could be explained in terms of real world performance or achievement levels. Much would depend on the experience of the participants, especially their ability to make trade-offs based on a well-founded perception of the implications of alternatives, not just in the short-term but also in the long-term. Since there may be considerable interest in widespread participation in this sort of exercise, a two-level Delphi might be run, in which large numbers of persons

are involved in a survey type Delphi to determine broad community opinion, while a fewer number of persons who might be community delegates or School Board members and/or staff could take part in a Delphi designed to use this information to develop guidelines concerning service provision.

Curriculum planning is another area in which there is a great deal of public interest and a need for public participation. It is frequently an area of considerable controversy owing to the diverse and specialized needs of different segments of the population. In addition, there is a great variety of opinion concerning curriculum needs within many groups. Typical questions that arise with respect to curriculum planning include the following:

1. To what extent should effort be directed toward provision of special or remedial classes?

2. What subjects should be required and what should be elective?

3. Should basic classes be taught in languages other than English if English is not the students' native language?

4. How much vocational education should be included in the curriculum?

A Delphi would provide a powerful means by which community feelings could be expressed on these issues and by which a consensus might be reached. It could be used to bring out basic needs in a non-hostile environment and lead to better understanding of divergent viewpoints among the community. For example, in the goals-Delphi study mentioned

previously, there were a number of references to curriculum issues, some of which were discussed at length in feedback. One issue was the teaching of home economics, and whether or not it should be optional for boys as well as girls. Another was whether foreign languages should be compulsory. One question that developed into a particularly interesting dialogue was whether the school should be responsible for the moral development of children through the curriculum.

It is unlikely that the Delphi could actually be used to design curricula in the sense of *how* a subject is to be taught. Although the overall direction could be set, a Delphi would not be used to plan details, choose text books, etc. It is best used to allow individuals or groups to formulate statements of the general problems and the needs they feel to be paramount in curriculum design, by encouraging exchange of ideas without turning discussion into inter-group rivalry. Several formats would be suitable for achieving these ends--in particular, a work shop type of Delphi which is concentrated into a one or two day session could be used since this would allow a large number of people to gather, and could be given some publicity in advance to encourage broad based attendance.

EDUCATIONAL EVALUATION

Educational evaluation, following a system analytic model, is accomplished in five stages:

1. Establish a set of goals and objectives.

2. Establish a standard for attainment on each objective.

3. Determine the extent of objective attainment.

4. Identify discrepancies.

5. Interpret results.

Although this provides a general framework or approach, the actual carrying out of evaluation involves consideration of a number of basic issues, for example the following:

1. How can the evaluation of the qualitative aspects of education be accomplished as well as the quantitative aspects?

2. How can the Board of Education evaluate its own performance from time to time, its practices, policies, and goals?

3. How can the need for curriculum change or development be determined?

4. How can evaluation be made a continuous, comprehensive, and cooperative process involving many people?

Determination of the degree of objective attainment is a task largely dependent upon the specificity of the criteria against which the judgment is made. Educational evaluation is a frustrating task because of the difficulty of precisely pinpointing the nature of the effects which the educational process inflicts upon the individual; these effects may vary as widely as the capabilities and motivations of individuals vary.

Education is a highly personalized process and should be evaluated in a highly personalized manner.

> *"Not all evaluation can be done by employing only objective data and by following rigid scientific procedures. While educators must continue to evaluate much of the educational enterprise by technical and objective methods, attention should also be given to other methods of appraisal."*
>
> (Engleman, Cooper and Ellena, 1963)

Delphi presents just such an alternative method of appraisal and has the capability of making qualitative as well as quantitative judgments concerning the success of any educational program. It has been used successfully as a direct means of evaluation in several studies. Cochran, Crumley and Overby (1970) describe a Delphi in which complete teacher evaluation was carried out using four independent panels which represented different kinds of evaluators. Reisman and Taft (1968) used Delphi to evaluate university faculty for academic merit and teaching ability. The participants involved in such personalized evaluations, even though they should represent a broad variety of interests and viewpoints, are unlikely to be picked at random from a community. A feature of Delphis concerned with personnel or student evaluation is that participation will probably be fairly tightly controlled and that the design should be such that participation is concentrated over short periods of time. Editing must be carried out with great care in this situation and responses should

probably be formalized rather than free form. Much will depend on the level of threat that is imposed in any particular Delphi and the degree of anonymity and confidentiality maintained.

BUSINESS OPERATIONS

In the field of business operations, the principal actors involved in decision-making are usually educational administrators. Typical questions facing these individuals are the following:

1. How can preparation of the budget reflect an adequately planned educational program?

2. How should financial resources be allocated among the various categories of expenditure such as the following?

   - instruction
   - attendance services
   - health services
   - plant operation
   - plant maintenance
   - food service
   - student-body activities
   - community services
   - capital outlay
   - debt
   - outgoing transfer accounts

- contingency purposes
- experimentation-curriculum

3. How can a Planning, Programming and Budgeting System (PPBS) be most efficiently established?

A thoughtfully prepared budget is a projection of the educational program is monetary terms. Clearly, from a systems point of view, the process of budgetary planning should begin with a detailed description of an educational program to be followed by the allocation of expenses, rather than vice versa. The primary direction in which Delphi may be applied to the problem of budgeting is in the development of weighted sets of operational objectives. The study quoted above in which system wide goals were prepared for a whole school district was tied in to the development of a PPB System in the area. Although not used in the exact form that the group of teachers, parents and students had developed through the Delphi, the administrators responsible for the PPB System used every statement produced as informational input to their work.

Delphi has also been used with budgetry connections in cost-benefit studies. In a small liberal arts college, the benefits of changes in teaching ratios was estimated using a cost-benefit framework and a Delphi strategy (Judd, 1969). This use could clearly be adapted to cost-benefit studies in other areas such as facilities planning. Thus, it can be seen that the applications of Delphi to budget management are essentially informational rather than decision-making in and of itself. The Delphi provides a means at the local level by which the Board may involve small

numbers of persons, with divergent interests but with some level of professionalism and understanding of budgetry concerns, in the planning process.

IV.
CONCLUSIONS

In this admittedly optimistic review of the potential uses of Delphi in educational planning, it has been determined that Delphi is applicable to a broad variety of subject areas. It has been used successfully both as an information retrieval device for factual and value-type data and as a decision-making tool in its own right. The extent to which it is capable of outright decision-making is a function of the identity of the participants rather than of the Delphi mechanism itself. Needless to say, the Delphi technique is not a panacea for all problems in the planning process; however, it does offer a strong alternative to conventional forms of participation in planning, and with careful design could be adapted to fulfill the needs of a number of quite specialized functions in educational planning.

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